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J. H. LAMBERT: A STUDY IN THE DEVELOPMENT OF THE CRITICAL PHILOSOPHY.[1]

ALTHOUGH once famous as a philosopher and mathematician, Lambert is probably now best known as one of Kant's numerous correspondents. In fact, his contributions to systematic philosophy are now quite forgotten.[2] Nevertheless, the views expressed in his letters to Kant are so remarkable as to suggest the advisability of investigating more fully not only the possible influence of Lambert upon Kant, but also the true significance of this philosopher in the historical development of speculative thought. The solution of these problems is the object of this paper; but first let us give a brief exposition of the views of Lambert as contained in the works which will serve as the basis of our investigation.

Lambert's purely philosophical publications are few in number. The only two of much importance are the *Cosmological Letters*, published in 1761, and the *New Organon*, which appeared in 1764. Directing our attention to these, the *Cosmological Letters* consists of what were, for the time, most remarkable astronomical speculations. It resembles in many ways the treatise of Immanuel Kant on the same subject. In addition, however, to the purely scientific discussion, there is not a little that verges on the domain of metaphysics. Although a Newtonian, the author considers the law of gravitation as only a descriptive formula, not a metaphysical truth; for *actio in distans* he regards as inconceivable, since contrary to experience. The same mode of reasoning, it is interesting to note, appears to lie at the basis of the modern theory of ether as the only explanation of optic and electro-magnetic phenomena, and probably of gravitation as well. Lambert, furthermore, argues from the successes of the empirical method in physical science, that all our knowledge is based on experience, but that the greater our knowledge of the physical universe, the greater appears to be our ignorance of its true constitution. He holds, however, that Leibnizian Teleology is quite in harmony with a mechanical theory of the universe, such as experience shows to exist. From this it is evident that Lambert is realistic in his sympathies, and that he endeavors to reconcile empiricism with rational metaphysics.[1]

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[1] Johann Heinrich Lambert was born at Muelhausen, Alsace, 1728. His death occurred in 1777. There is but one edition of his principal philosophical work, the Organon, that of 1764 (Leipzig).

[2] An enthusiastic, but extremely partial, discussion of Lambert's work is given by R. Zimmermann: Lambert der Vorgänger Kants, Sitzungsberichte der Kaiserlichen Academie der Wissenschaften zu Wien, 1879.

In the *Cosmological Letters*, as we have seen, Lambert is led up to ontological problems from the inductively ascertained laws of physics and astronomy. In the *New Organon*,[2] on the other hand, which is a treatise on logic and scientific method, we are introduced to the problems of the theory of knowledge and ontology by the subjective, as opposed to the objective, method of philosophizing. It will be found that the results which the author arrives at are similar. The epistemological problem is developed in the *Organon* from the consideration of the function of experience in scientific knowledge. All knowledge, the author argues, is not empirical; for this would give only historical enumeration.[3] In scientific knowledge individual empirical cognitions are synthesized into a systematic unity. Such scientific cognitions as the laws of physics or the theorems of mathematics, have as their basis simple, homogeneous concepts,[4] such as *time*, *space*, *solidity*, *etc.* Many of these correspond to the primary qualities of Locke. These are non-contradictory, Lambert holds, since they are qualitatively heterogeneous with each other. Hence their representation involves their possibility. They are, therefore, independent of experience, or *a priori;* though experience is necessary in order that these concepts be brought to consciousness (§ 656). Furthermore, the *a priori* sciences of geometry and kinetics prove the *a priori* nature of the concepts that make them possible (§ 658). Such being the process of knowledge, what relation does knowledge have to being? In answer to this, Lambert argues that idealism cannot explain the distinction we make between the true and the apparent, a position clearly that of the scientist rather than the metaphysician. But the senses by which we perceive the objective world, Lambert continues, are limited in their ability to respond to external stimuli. We have no means of perceiving electric phenomena directly, nor yet the ether waves beyond the red and the violet ends of the spectrum. The objective phenomena, furthermore, which we perceive are homogeneous, since they are all modes of motion; but the subjective corresponding phenomena are heterogeneous sensations.[1] Hence, from the very nature of knowledge, involving, as it does, a subjective factor, a philosophy of pure realism is impossible. But an objective factor, also, is necessary in cognition. By developing, therefore, our scientific knowledge from empirical and consequently objective data, we may in our thought approach nearer and nearer to the ultimate reality that underlies the apparent. But this ultimate reality we can never reach, by reason of the partial subjectivity of knowledge, and the world as known, therefore, will ever be but a symbol of that which is.[2]

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[1] Lambert's speculative reasonings are scattered throughout the entire book. But though the thought is not systematically developed, the above appears to be the author's position.

[2] The full title of the work is: Neues Organon, oder Gedanken über die Erforschung und Beziehung des Wahren und dessen Unterscheidung von Irrthum und Schein.

[3] Vol. i, ch. ix, § 600.

[4] Einfache Begriffe.

From this brief exposition of the Lambertian philosophy, we cannot but conclude that the author was endeavoring to solve the one philosophic problem of the age, and effect a reconciliation of the empirical and rational theories of knowledge. Lambert was, therefore, on Kantian ground, and it is necessary to point out more clearly the exact relation that exists between the two systems of thought.

Noticing briefly the points of contact in the early astronomical speculations of Lambert and Kant, before proceeding to a comparison of their respective theories of knowledge, we observe that though they were both ardent Newtonians, Lambert did not accept the law of gravitation as necessarily a metaphysical truth; Kant, however, with less caution, assumed the principle of the dynamical action and interaction of matter, and sought to refute thereby the Leibnizian Monadology. The two mathematicians, nevertheless, were otherwise quite in agreement, for both endeavored to reconcile teleology and mechanism.

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[1] Vol. ii, Phänomenologie, ch. 2, § 64. It is evident that Lambert foreshadowed the modern discoveries of Psycho-Physics.

[2] *Ibid.* § 89.

Passing now to the more important question of the respective contributions of the two thinkers to the theory of knowledge, the problem proposed in the *Critique* and that which is developed in the philosophical section of the *Organon* are essentially the same: that of Kant is, How are synthetic, *a priori* judgments possible in mathematics and in physics? that of Lambert is, How is scientific knowledge possible? The methods employed are also very nearly identical. Kant's method is, to analyze knowledge and the fundamental element in knowledge — experience; that of Lambert is, to analyze scientific knowledge. Kant, however, clearly followed the critical method more rigorously, even if, as some hold, unsuccessfully; for he sought to demonstrate how experience itself is possible. His predecessor analyzed knowledge, but not the important element in knowledge. As regards the results arrived at by their analyses, both philosophers agree in considering all knowledge to be based on experience, and in assigning to the objective and subjective factors alike a share in the process of cognition. Their criteria, furthermore, are the same; necessity and universality are regarded as non-empirical, and therefore *a priori*. Still more important, as regards his relation to Kant, is Lambert's view that the *a priori* concepts are formal principles only, and do not therefore give material truth. To this fundamental doctrine of the later Critical Philosophy, Lambert, unfortunately, does not consistently adhere. For his confusion of the ontological with the subjective validity of the simple concepts is in direct contradiction with this doctrine.[1]

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[1] Lambert speaks of the propositions of geometry as "eternal and unchangeable truths." Vol. i, ch. 2, § 658.

In fact, his vacillating adherence to the dogmatic ontology of the age is in marked contrast with the clearly developed Kantian refutation of the Wolffian method. Probably, however, had Lambert been aware of the logical conclusion of Locke's sensationalistic epistemology in Berkeleyan Idealism, he would have avoided, as did Kant, such a contradiction. And had he read Hume, his main argument for the absolute objectivity of the physical world, that there must be a cause of sensation, would have vanished. But it is a matter for discussion whether Kant himself, in spite of his study of Hume, may not be criticised as regards his views on causality and its application to the *Ding-an-sich.*

Remarking now briefly upon Lambert's thought as a unity, there is, we think, a fundamental fallacy in the *Organon.* I refer to its eclecticism. Lambert sought to unite the philosophies of Leibniz and Locke. But the main problem was one of method, and the two methods, empiricism and rationalism, were diametrically antithetical. The Kantian Criticism did not seek to unite the two methods, but rather to construct a new method to take the place of its predecessors. Lambert perceived clearly the need of a new method in philosophy,[1] but this he failed to give. The *Organon* is rich in scientific method, but formulates no laws of philosophical method. Nevertheless, the general trend of thought in the *Organon,* not to speak of many important doctrines, is in reality that of the *Critique of Pure Reason.*

As to the possible influence exerted by Lambert upon the Königsberg philosopher, this might have taken place in one of two ways, — either through the published works of Lambert, or through his letters to Kant. Discussing first the relation of Lambert's publications to the thought of Kant, the *Theory of the Heavens* was written independently of Lambert's astronomical speculations, as it was composed before the *Cosmological Letters* was published. With regard to the *Organon,* it is doubtful whether Kant was influenced by any of the views here expressed, unless it was by those bearing on the *a priori* basis of mathematics. But this problem can be discussed to better advantage in connection with the correspondence of Kant and Lambert. There is nothing to indicate that Kant received any other important suggestion from Lambert's work. Even at this period (1764), Kant's thought had reached such a point in its development that he could have derived but little from Lambert's attempted reconciliation of the Lockian and Leibnizian theories of knowledge. Even Lambert's exhaustive discussion of being and appearance (*Sein* and *Schein*), which reminds one of the Kantian distinction between *noumenon and phaenomenon*, it is unnecessary to consider. For Kant must inevitably have been forced to such a distinction, rejecting as he did the Wolffian theory of thought and reality.

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[1] *Vide* Neues Organon, Preface; also Lambert's letters to Kant.

Turning now to the correspondence of Kant and Lambert,[1] we find that in November, 1765, the then famous mathematician wrote to the Königsberg docent, calling his attention to the similarity of their views in astronomy and in philosophy, for Kant had already published his *Theory of the Heavens* and also his dissertation on *The Only Possible Proof for the Existence of God.* Lambert proposes, moreover, that they plan a joint philosophical undertaking. The object of this is to be the improvement of metaphysics, and above all the perfection of a new method, for this is especially needed, since the method of Wolff, which proceeds in a circle of definitions and assumptions, has already proved its inadequacy.[2] To these overtures Kant immediately replied, accepting Lambert's offer, of which he shows the warmest appreciation. Lambert wrote again a month later, stating as the problem of interest, "whether, and if so how far, knowledge of form leads to knowledge of matter."[3] In philosophy, Lambert explains in some detail, we cannot resort to intuition as in mathematics, as we are here concerned with material, not merely formal truth. But if we wish to make progress in metaphysics, we must go back to the simplest elements in knowledge. Unfortunately Kant did not reply to this letter. In 1770, however, he sent his inaugural dissertation, *On the Form and Principles of the Sensible and Intelligible World.* In acknowledging the receipt of this letter, Lambert accepts the conclusions of Kant as to the intuitional basis of time and space, but denies that time is merely an *a priori* form of sensibility on the ground that changes in consciousness necessitate the reality of time.

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[1] This correspondence may be found in Rosenkranz' Kant, vol. i; also in Hartenstein's Kant, vol. viii.

[2] Rosenkranz' Kant, vol. i, p. 347.

[3] *Ibid.* p. 354.

This correspondence, we observe, began in 1765. At this period Kant had already broken away from the fundamental ontological fallacy of the Leibniz-Wolffian philosophy, and had made the distinction between formal or mathematical, and material or metaphysical truth. This is shown by the essays that appeared from 1762 to 1763. Kant could not, therefore, have been indebted to the corresponding suggestions of Lambert. He had furthermore already arrived at a conviction of the need of a new method in philosophy, which should serve as a criterion for metaphysical speculation, for he himself so states, both in his letter to Lambert and also in a letter to Bernouilli. Again, Lambert's profound conception of the necessity of basing philosophical reasoning upon what is now called the theory of knowledge was probably not new to Kant. Even before this, he was reported to have said that "Metaphysic is nothing but a philosophy of the first principles of our knowledge."[1] Consequently we cannot regard these most Kantian views of Lambert as more than historical coincidences.

There is, however, one doctrine which, we think, may possibly be of more historical importance. I refer to Lambert's repeated discussion of the problem of mathematical judgments. The reason of the great progress of mathematical science, Lambert declares, is that it is based on simple, homogeneous concepts, heterogeneous elements never being introduced.[2] Not only this, but the mathematician starts with intuitions, not with arbitrary definitions. Now it is quite possible that we have here the germ of the celebrated theory of the Transcendental

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[1] *Vide* Stuckenberg, The Life of Immanuel Kant, p. 239, where this is stated positively. The author does not give his authority.

[2] Rosenkranz' Kant, vol. i, p. 356.

Æsthetic. It was upon the intuitional basis of mathematical judgments that Kant based his reasonings as to the intuitive, *a priori* nature of space and time. There is no evidence that I know of that Kant began the investigations which led to his final doctrine, before the period at which Lambert's letter was written. His mathematical studies, it is true, had shown him the erroneous use in philosophy of the mathematical method. But in his essay, *The Attempt to Introduce Negative Quantities into Philosophy*, the discussion is of logical, not sensuous problems. Kant had learned at this time that synthesis of ontologic validity was impossible for thought; he had not learned that it was likewise impossible for sense. Furthermore, in his reply to Lambert's letter sent him four years before, Kant discusses the problem of mathematical cognitions referred to by Lambert, and even states, to quote his own words,[1] "I could resolve upon nothing else than to communicate to you a clear outline of the way in which this science appeared to me, and also a definite conception of its peculiar method. In carrying out this intention I was led to investigations *that were entirely new to me. . . . But a year ago did I arrive at this conception.*"[2] Does this not at least make probable that it was Lambert's views that formed the starting-point of the Kantian conception of the transcendental ideality of time and space as the only possible solution of the problem of mathematical judgments? Besides, the step was short from a formal *a priori* concept to a form of sensibility, since Kant's reading of Hume had shown him the importance of sensation. Lambert, having read only Locke, whose sensationalistic epistemology is incomplete, failed to draw this distinction. In his final letter to Kant, however, he agrees with him in paying this tribute to sensation. Again, once having given that time and space were *a priori* forms of sensibility, the natural supposition was that they were nothing more, at least from the standpoint of Kant, who had rejected the Leibnizian identification of thought and reality. But aside from these reasons, it is certain that from about the time when Kant received Lambert's letter until 1770 he was at work upon this very problem of mathematical knowledge. It is equally certain, for he himself so states, that up to the time he received Lambert's first letter he was occupied in an entirely different sphere of speculation, the method of philosophy, the metaphysical principles of morals, and the principles of natural (not mathematical) science. From these various facts we cannot but conclude that it is more than possible that the starting-point of the Transcendental Æsthetic was unconsciously given by Lambert. And if it is to Lambert that Kant owed the starting-point of his theory of sensibility, it is to Lambert that he owed the starting-point of his entire theoretical philosophy.

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[1] Rosenkranz' Kant, vol. i, p. 358.

[2] The italics are my own.

We have now completed our examination of the historical relation existing between Lambert and Kant, as well as of the relative worth of Lambert's contributions to philosophy considered with reference to those of his successor. It remains only to point out that the position of Lambert in the history of speculative thought is quite independent of the purely logical validity of his philosophic *Weltanschauung*. Whether or not his epistemology be more tenable than that of Kant, it failed utterly to break the metaphysical deadlock of the age. It was not the *Organon*, but the *Critique of Pure Reason*, that developed clearly that fundamental conception for which the philosophic consciousness of humanity was then waiting, that of truth subjective as separate and distinct from truth as applied to things-in-themselves. Nevertheless Lambert's work, considered of itself, without reference to its possible influence on Kant, is of not a little historical significance. For, even though shadowy and incomplete, it may, we think, justly be regarded as the premature objectification of critical tendencies not yet ripe for fruition, but which when fully matured, reached their final perfection in the philosophy of Immanuel Kant.

HAROLD GRIFFING.

COLUMBIA COLLEGE,
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